CW#9&10: Distance/ Absolute Value/ line Segments

Honors Geometry

September 16th and 17th, 2015

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_

Group A: SWBAT draw, label, and identify the length of a line segment with or with out a ruler.

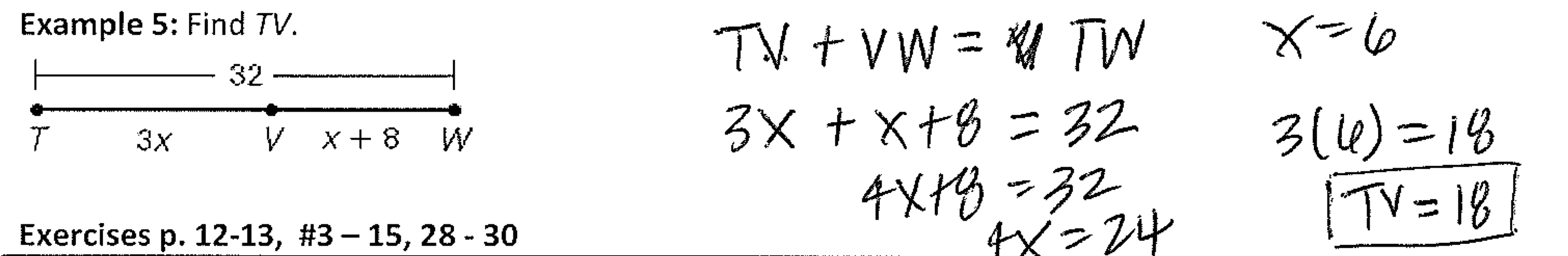
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| 1. Define “collinear” and *sketch an example* of collinear points. | | 2. Define “coplanar” and *sketch an example* of coplanar points. | |
| 3. What is the different between a ray and a line? | | 4. Write the necessary notation above “AB” to demonstrate that (a.) is a line, (b.) is a line segment, and (c.) is a ray.  (a.) AB (b.) AB (c.) AB | |
| 5. Use the diagram to decide whether the given statement is *true* or *false*.   1. Points E, G, and F are collinear. \_\_\_\_\_\_\_\_\_\_ 2. Points E, G, and F are coplanar. \_\_\_\_\_\_\_\_\_\_ 3. Points *H*, *I*, and *G* are collinear. \_\_\_\_\_\_\_\_\_\_ 4. Points *H*, *I*, and *J* are coplanar. \_\_\_\_\_\_\_\_\_\_ | |  | |
| 6. Match the 0 cm mark at point A.      How long is segment AB? | 7. Draw a line that is 2cm long. Label one end A and the other C. | | 8. Draw a line that is 1.5 inches. Label this segment FM. |

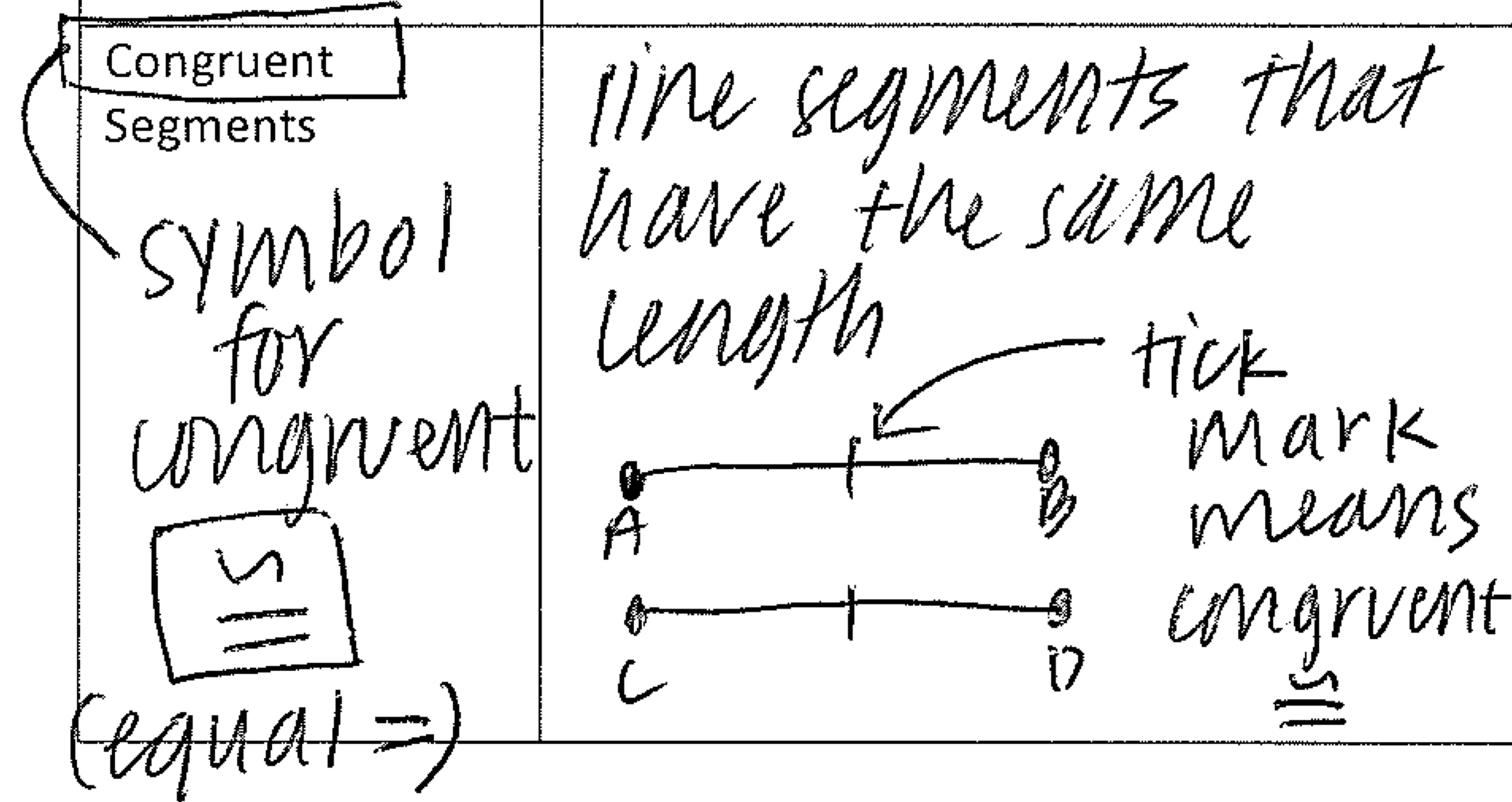
Group B: SWBAT Find the distance between two points on a number line using absolute value

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| Example 1: What is the distance in coordinate units between points V and W?    How could you represent this algebraically (without counting)? | |
| You Try! What is the distance in coordinate units between points Y and Z?    How could you represent this algebraically (without counting)? | |
| Example 2: What is the distance in coordinate units between points V and Y?    How could you represent this algebraically (without counting)?  Which is longer: or ? By how much is it larger? | |
| You Try! What is the distance in coordinate units between points Z and W?    How could you represent this algebraically (without counting)?  Which is longer: or ? By how much is it larger? | |
| Use the description of the points to answer questions 5 – 6. You may check your work using a number line, but you must *show your calculations using absolute value*.    *Point W is 3, X is –5, Y is –16, and Z is 11.* | |
| 5. What is the distance, in coordinate units, between points *W* and *Z*? | 6. What is the distance, in coordinate units, between points *Y* and *Z*? |
| 7. How much longer is *WY* than *XZ*? | 8. How much longer is *YZ* than *WX*? |

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| 9a. On the number line below, show the two points that demonstrate |x| = 7, meaning “the absolute value of x is 7” or “x is 7 away from 0”.  http://www.algebra-class.com/images/numberline.gif  9b. Write the solution set to |x|=7: {\_\_\_\_, \_\_\_\_}  9c. What is the difference between the two possible values for x? \_\_\_\_\_. Explain why this is the answer using the number line: | |
| 10a. Which of the following absolute value equations describes the number line below? Explain why.   1. |x – 4| = 1 2. |x – 1| = 4 X~~1~~ (4) (4) X2   http://www.algebra-class.com/images/numberline.gif | |
| 10b. How would you describe this situation in words? | 10c. What is the difference between the two values of X (5 and -3)? Demonstrate this using an algebraic equation.  10d. How does this relate to the original absolute value equation? |
| 10a. On the number line below, show the two possible points for x on the number line for the equation |x – 3| = 7:  http://www.algebra-class.com/images/numberline.gif  10b. Using the number line, demonstrate how this equation means “x is 7 units away from 3.” | |
| 10c. Demonstrate that this works logically (algebraically): | 10d. Write the solution set to |x – 3| = 7: {\_\_\_\_, \_\_\_\_}  10e. What is the difference between these two possible values for x? |
| 11a. Assume that |x – a| = b. Express this in words: | 11b. Show this on a number line: |

C: SWBAT use the segment addition postulate to find the missing lengths of line segments





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| 1. Measure the following line segments to the nearest tenth of a centimeter and the nearest of an inch.    AB: \_\_\_\_\_\_\_\_ centimeters \_\_\_\_\_\_\_\_\_ inches  CD: \_\_\_\_\_\_\_\_ centimeters \_\_\_\_\_\_\_\_\_ inches | 2. On a particular line segment, points *A*, *B*, and *C* are collinear, and *B* is between *A* and *C*. If *AB* = 15 and *BC* = 9, what is the measure of *BC*? |
| 3. Find *KM.* | 4. Find *ST.* |
| 5) The diagram shows three houses on a street. Find the distance from House A to House C. | 6. If *AC* = 35, what is the value of MC?  x + 5 2x  A M C |

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| 7) Find *LM*. | 8) Find *YZ*. | |
| 9) On the map, AB represents a trail that you are hiking. You start from the beginning of the trail and hike for 90 minutes at a rate of 1.4 miles per hour. How much farther do you need to hike to reach the end of the trail (point B)? | | |
| 10) Plot the given points in a coordinate plane. Then state whether the line segments are congruent (congruent means “to have the same length”). | | |
| 1. Plot the points *A*(2, 2), *B*(4, 2), *C*(–1, –1), *D*(–1, 1)   Are AB and CD congruent? \_\_\_\_\_\_\_\_\_\_\_\_\_   1. Plot the points *M*(1, –3), *N*(4, –3), *O*(3, 4), *P*(4, 4)   Are MN and OP congruent? \_\_\_\_\_\_\_\_\_\_\_\_\_   1. Plot the points *E*(–3, 4), *F*(–1, 4), *G*(2, 4), *H*(–1, 1)   Are EG and FH congruent? \_\_\_\_\_\_\_\_\_\_\_\_\_ | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

D: SWBAT define segment congruence and use to find lengths of segments.

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| 11) Find EF. |